

Fig. 1

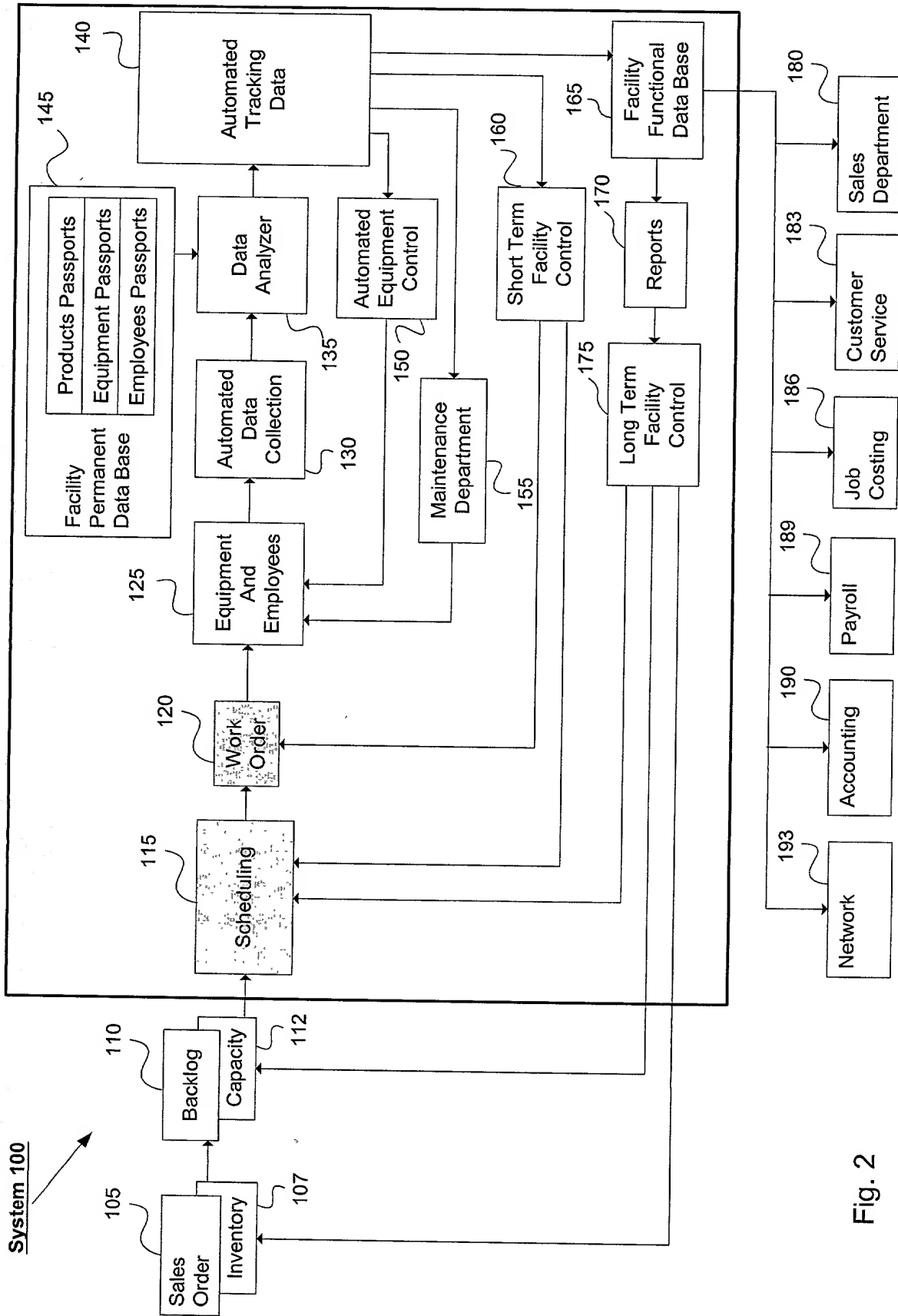
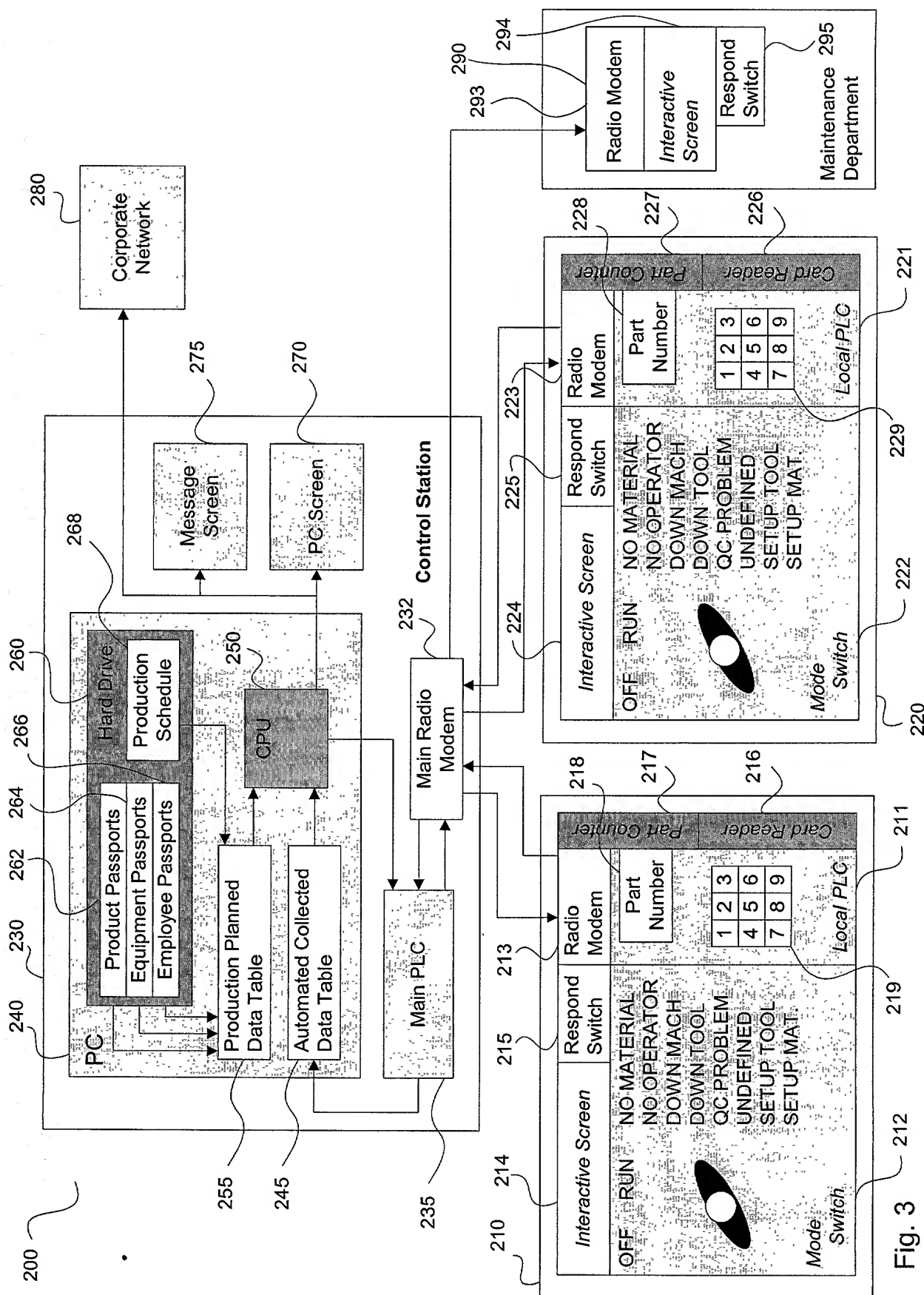


Fig. 2



200 210 220 230 240 250 260 270 280 290
 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

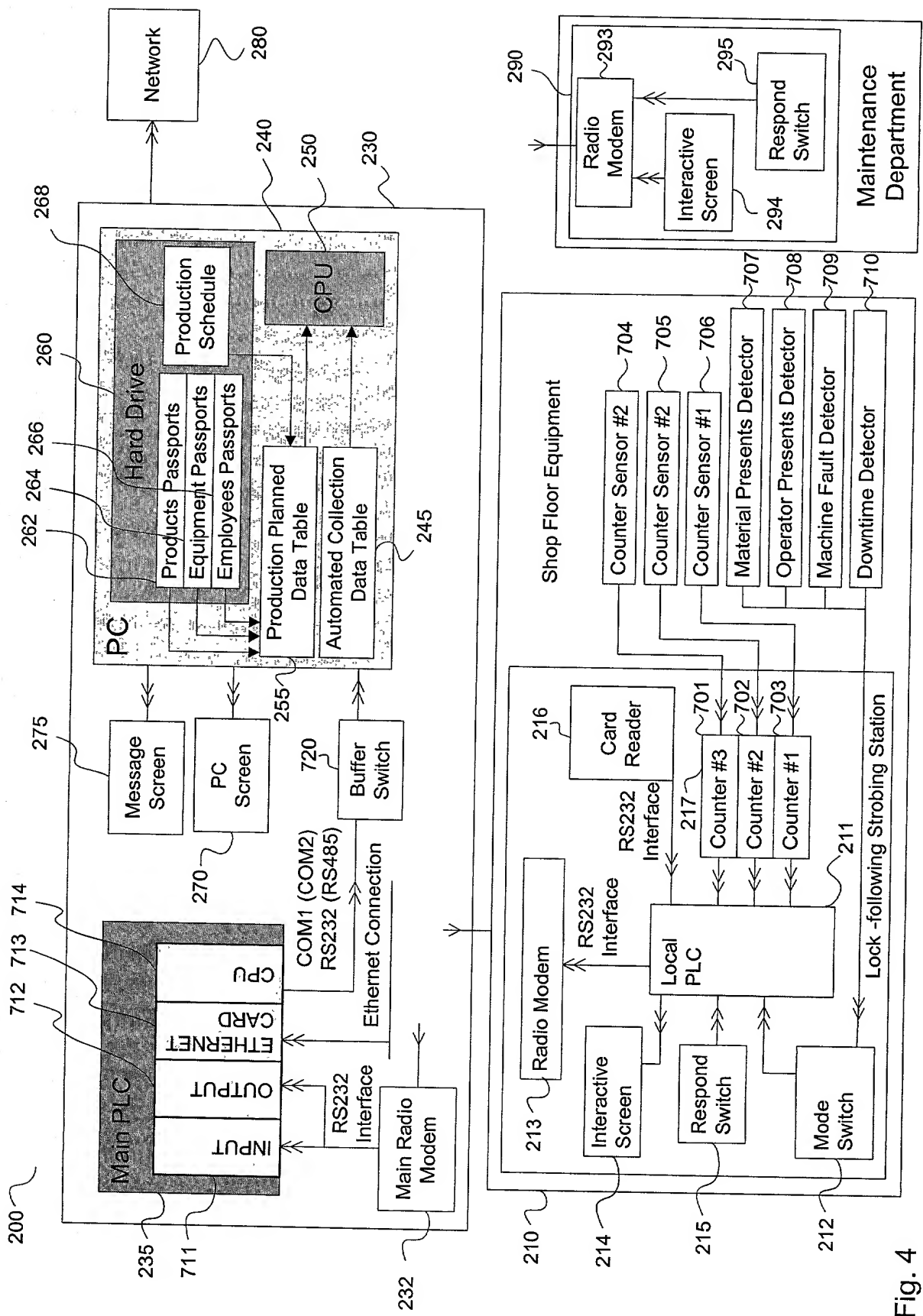


Fig. 4

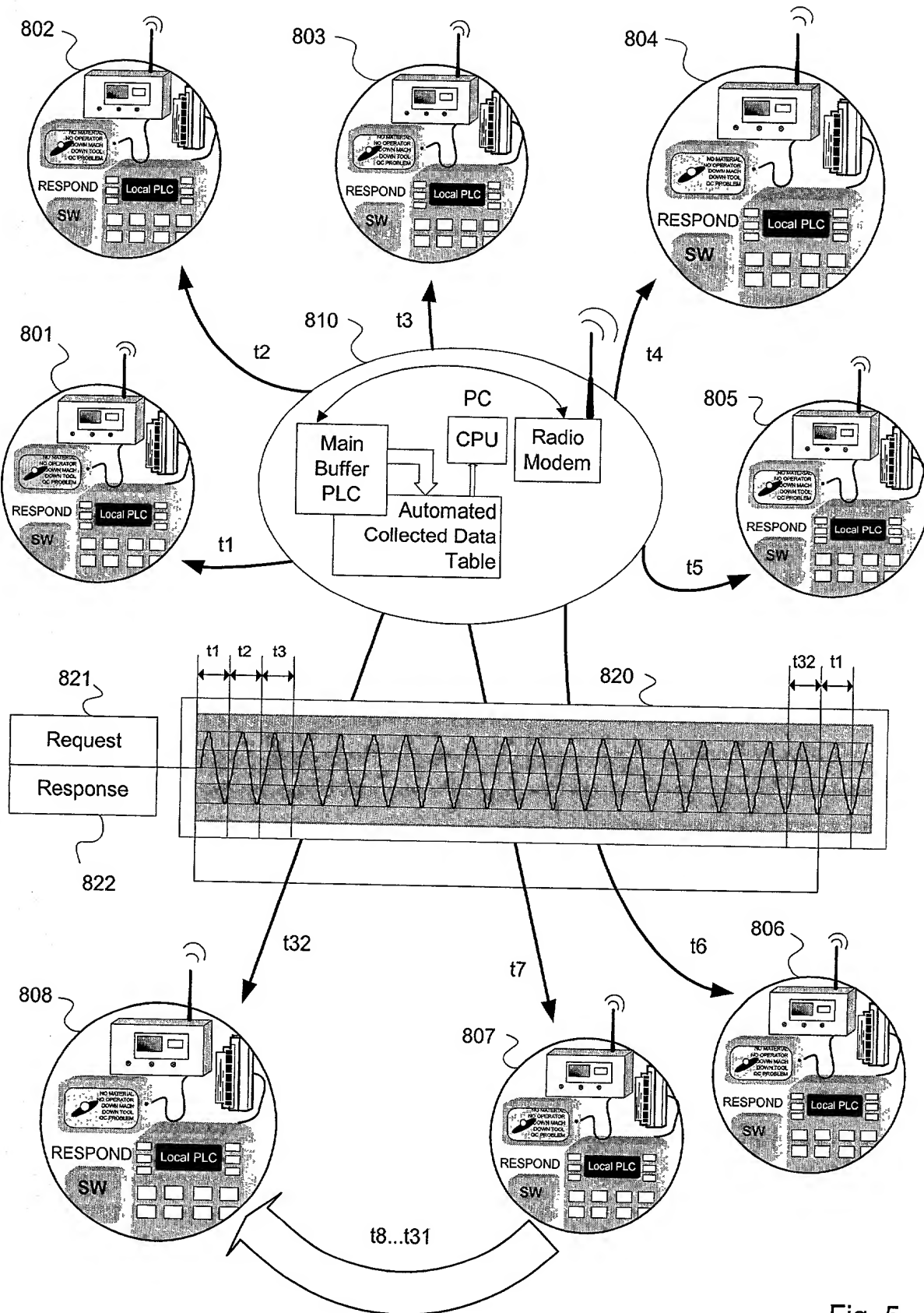


Fig. 5

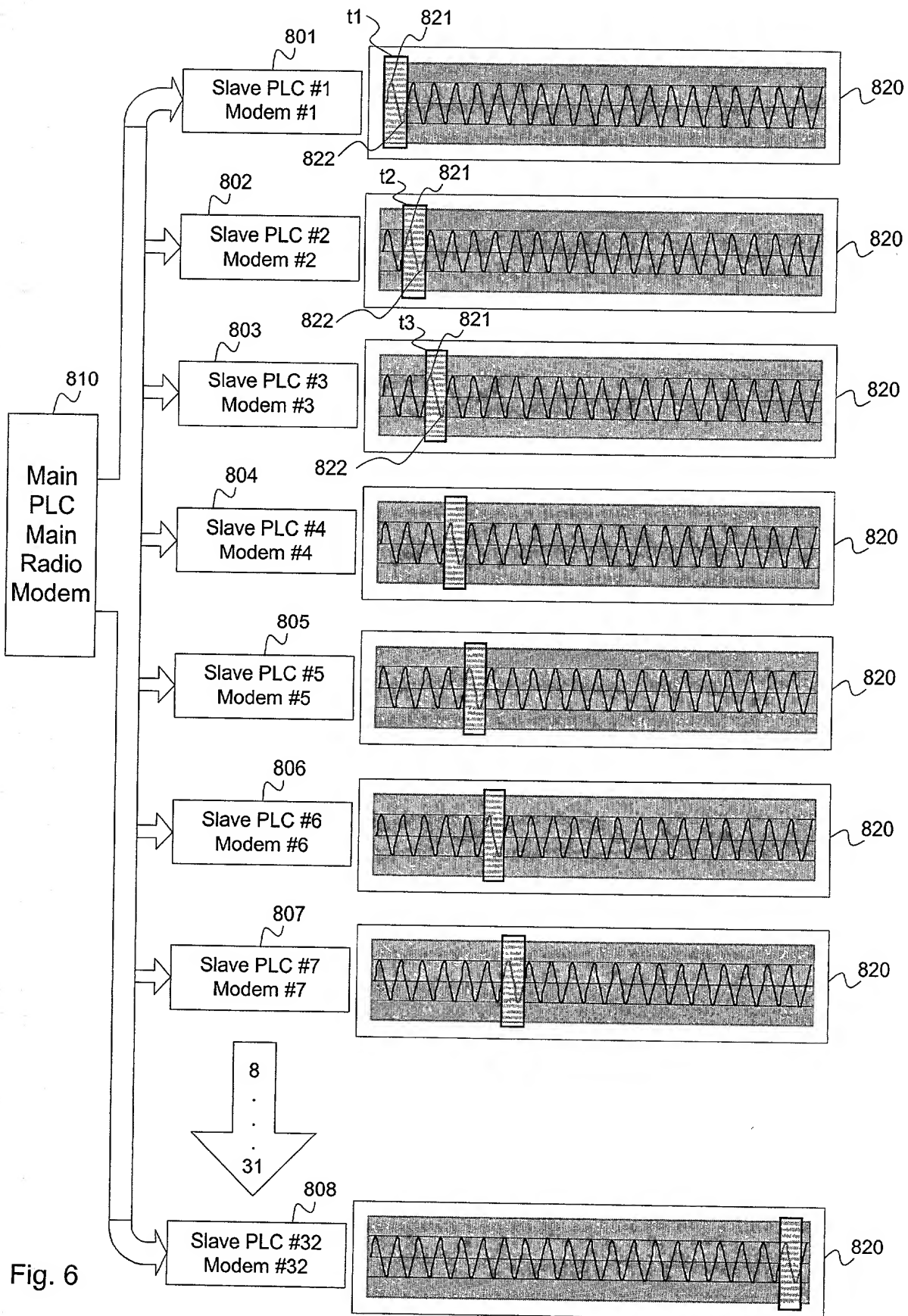


Fig. 6

ABC Corporation		Employee's Passports			<input type="button" value="Edit"/> <input type="button" value="New"/> <input type="button" value="Conv"/> <input type="button" value="Delete"/> <input type="button" value="Print"/>			
Plant	Employee	Period	Sort					
	ID	Name	Division	Position	Hourly Rate	Date of Hire	Seniority	
310	20356	Bob G Smith	Machining	Operator	7.25	10/23/99	3	↑
302	20357	Tom Parker	Machining	Line Lieder	10.50	03/04/98	5	↓
303	20358	Jim Faele	Machining	Onerator	8.50	05/06/98	4	
304	20359	Bill Carter	Machining	Operator	6.00	10/01/01	1	

Details

ID:

Name:

Division:

Position:

Description:

Hourly Rate:

Date of Hire:

Seniority:

Fig. 8

ABC Corporation

Equipment

Period

Sort

Edit

New

Conv

Delete

Print

ID	Name	Number	Division	Operation	Available Time	Depreciation	Date of New	Complexity	Post
90356	Lathe	#1	Machining	OD	470	7.25	10/23/79	3	2
90357	CNC Mill	#2	Machining	Base	450	10.50	03/04/68	5	4
90358	CNC Mill	#6	Machining	Inside	450	8.50	05/06/98	4	8
90359	Drill Press	#12	Machining	Holes	480	6.00	10/01/66	1	6

Details

ID

90358

Depreciation

8.50

Name

CNC Mill

Date of New

05/06/98

Division

Machining

Complexity

4

Operation

Inside

Post Number

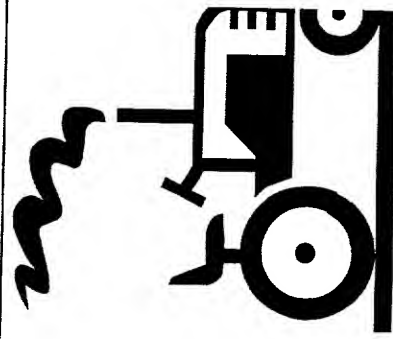
8

Available Time

450

Description

VMC Haas 20x30x25



OK

Cancel

320 Fig. 9

ABC Corporation

Plant
Part Number
Period
Sort
Edit
New
Conv
Delete
Print

ID	Name	Number	Division	#Operations	Production Time	Labor Cost	Assemble Number
000001	Piston	EN203	Machining#1	5	120	9.20	EN001
000002	Cylinder	EN406	Machining#1	4	050	4.30	EN001
000003	Arm	DX123	Machining#2	4	044	4.35	DX005
000004	Shaft	DX432	Machining#2	6	102	8.70	DX005

Details

ID

Name

Division

#Operations

Description

Production Time

Labor Cost

Assemble Number

Operations Enter

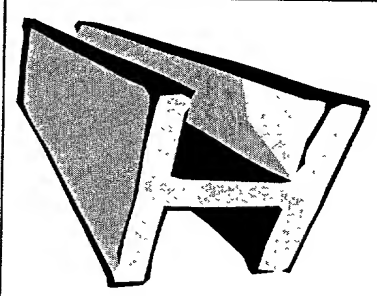


Fig. 10

ARC Corporation
 10000 Highway 100, Suite 100
 Dallas, Texas 75243
 Phone: (214) 343-1111
 Fax: (214) 343-1112
 E-Mail: info@arc.com

ARC Corporation

Part: DX005 - Arm

Edit

Delete

Print

Production

310

ID	Name	Number	Division	Equipment	Production Time	Labor Cost	Post
0001	Cut off	010	Ship. - Receiv.	Saw #1	5	0.62	no
0002	Milling	020	Machining #2	Vert. Mill #4	23	3.45	3
0003	Drilling	030	Machining #2	Drill Press #2	12	1.70	5
0004	Deburring	040	Machining #2	Table #5	4	0.58	9

Details

ID

0003

Equipment

Drill Press #2

Name

Drilling

Production Time

12

Number

030

Labor Cost

1.70

Division

Machining #2

Post Number

5

Description

Drill 28 holes Dia. 0.38"

OK

Cancel

340

Fig. 11

Table Format Schedule 350

ABC Enterprises Scheduling

351 FIRST SHIFT

04/24/01 04/25/01 04/26/01 04/27/01 04/28/01 4/24-4/28

	Monday		Tuesday		Wednesday		Thursday		Friday		TOTAL PER WEEK	
	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.
361 Press Line	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	6250
362 Weld Line	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	6250
363 Trim Line	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	6250
364 Paint Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250
365 Packaging Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250

352 SECOND SHIFT

04/24/01 04/25/01 04/26/01 04/27/01 04/28/01 4/24-4/28

	Monday		Tuesday		Wednesday		Thursday		Friday		TOTAL PER WEEK	
	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.	Type	Quan.
361 Press Line	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	6250
362 Weld Line	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	6250
363 Trim Line	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	6250
364 Paint Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250
365 Packaging Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250

Fig. 12

ABC Enterprises Product Flow Tracking

400

Product Flow Tracking

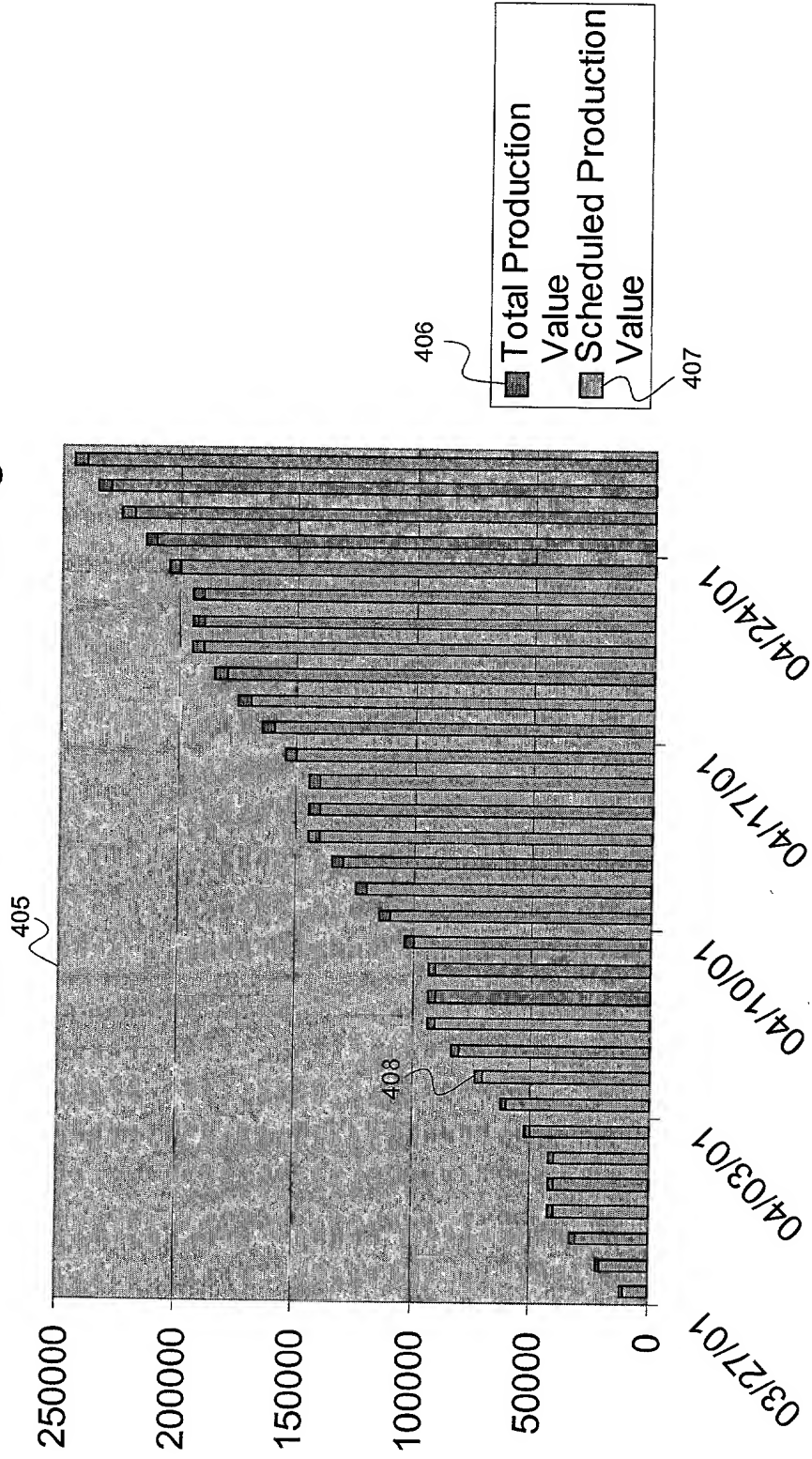


Fig. 13a

ABC Enterprises Product Flow Tracking

date	day	daily production value	total production value	scheduled production value	percent manufactured
03/27/01	tue	8500	8500	10000	85%
03/28/01	wed	10000	18500	20000	93%
03/29/01	thur	9100	27600	30000	92%
03/30/01	fri	10000	37600	40000	94%
03/31/01	sat	0	37600	40000	94%
04/01/01	sun	0	37600	40000	94%
04/02/01	mon	10000	47600	50000	95%
04/03/01	tue	10000	57600	60000	96%
04/04/01	wed	9000	66600	70000	95%
04/05/01	thur	10000	76600	80000	96%
04/06/01	fri	10000	86600	90000	96%
04/07/01	sat	0	86600	90000	96%
04/08/01	sun	0	86600	90000	96%
04/09/01	mon	10000	96600	100000	97%
04/10/01	tue	9100	105700	110000	96%
04/11/01	wed	10000	115700	120000	96%
04/12/01	thur	9510	125210	130000	96%
04/13/01	fri	10000	135210	140000	97%
04/14/01	sat	0	135210	140000	97%
04/15/01	sun	0	135210	140000	97%
04/16/01	mon	10000	145210	150000	97%
04/17/01	tue	10000	155210	160000	97%
04/18/01	wed	9800	165010	170000	97%
04/19/01	thur	10000	175010	180000	97%
04/20/01	fri	10000	185010	190000	97%
04/21/01	sat	0	185010	190000	97%
04/22/01	sun	0	185010	190000	97%
04/23/01	mon	10000	195010	200000	98%
04/24/01	tue	9850	204860	210000	98%
04/25/01	wed	9853	214713	220000	98%
04/26/01	thur	10000	224713	230000	98%
04/27/01	fri	10000	234713	240000	98%

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Fig. 13b

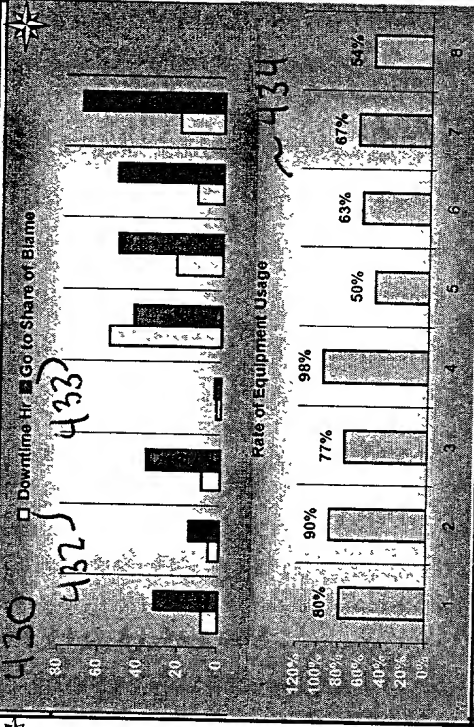
Equipment Condition Tracking

File: Company Product / Employee Period Analysis

Subdivision # 422-7 Date Shift

Post ID	Schedule av. Time	Productive time	Rate of Equip. Usage	Downtime Hr	Rate of Downtime to total	Go to Share of Blame
1	200	160	80%	8	4%	32
2	200	180	90%	5	3%	15
3	200	154	77%	9	5%	37
4	200	195	98%	2	1%	3
5	200	100	50%	56	28%	44
6	200	125	63%	23	12%	52
7	200	134	67%	13	7%	53
8	200	107	54%	22	11%	71

421 { 423 424 425 426 427 428 429



Subdivision # Date Shift

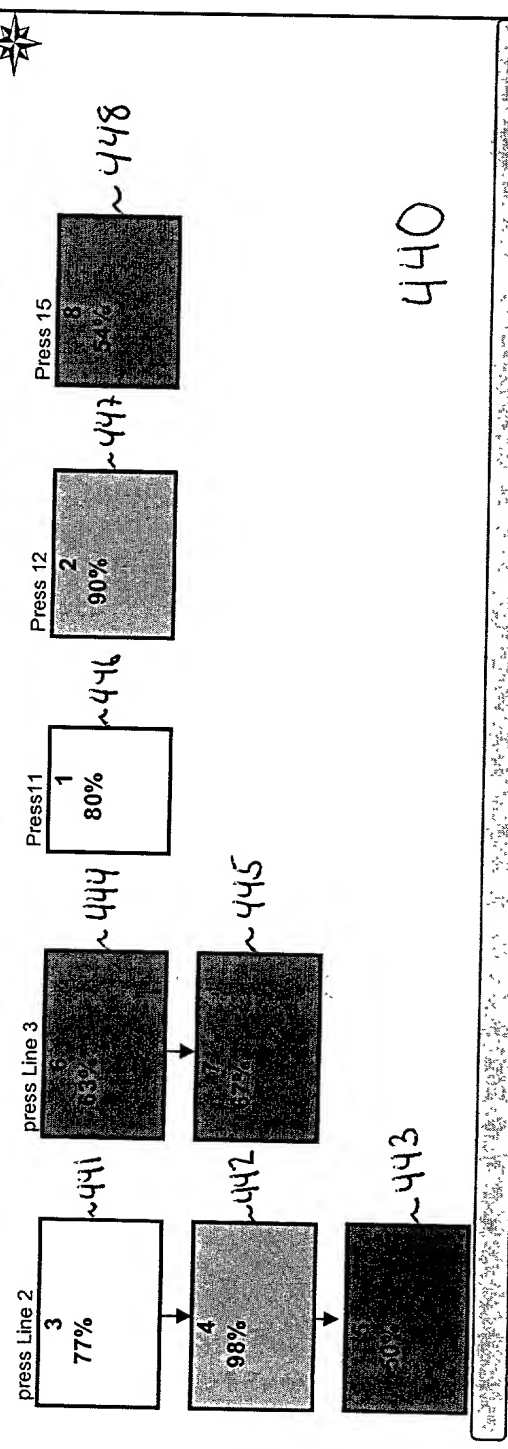


Fig. 14

420

4507

ABC Enterprises Manufacturing Efficiency and Costing

File Company View Product Employees Period Analysis

Subdivision	Scheduled efficiency	Actual efficiency	Percent efficiency
Press Line	.21 man hour / part	.27 man hour / part	-29%
Weld Line	.25 man hour / part	.32 man hour / part	-28%
Trim Line	.25 man hour / part	.22 man hour / part	12%
Paint Line	.15 man hour / part	.19 man hour / part	-26%
Assembly Line	.30 man hour / part	.28 man hour / part	7%
Package Line	.20 man hour / part	.18 man hour / part	10%

4517

4512

4513

4514

4515

Fig. 15a

ABC Enterprises Manufacturing Efficiency and Costing

File Company View Product Employees Period Analysis



Subdivision

Percent efficiency

Package Line

Assembly Line

Paint Line

Trim Line

Weld Line

Press Line

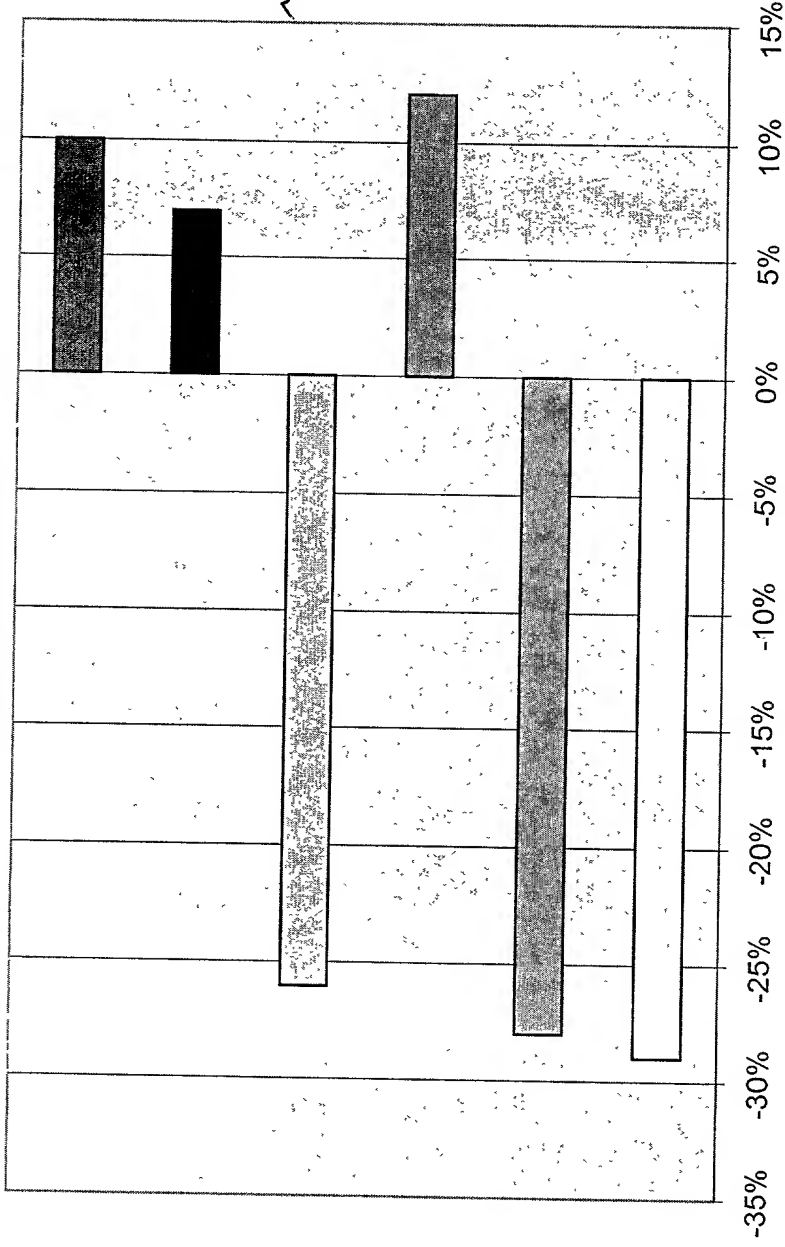


Fig. 15b

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ABC Enterprises Manufacturing Efficiency and Costing

File Company View Product Employees Period Analysis

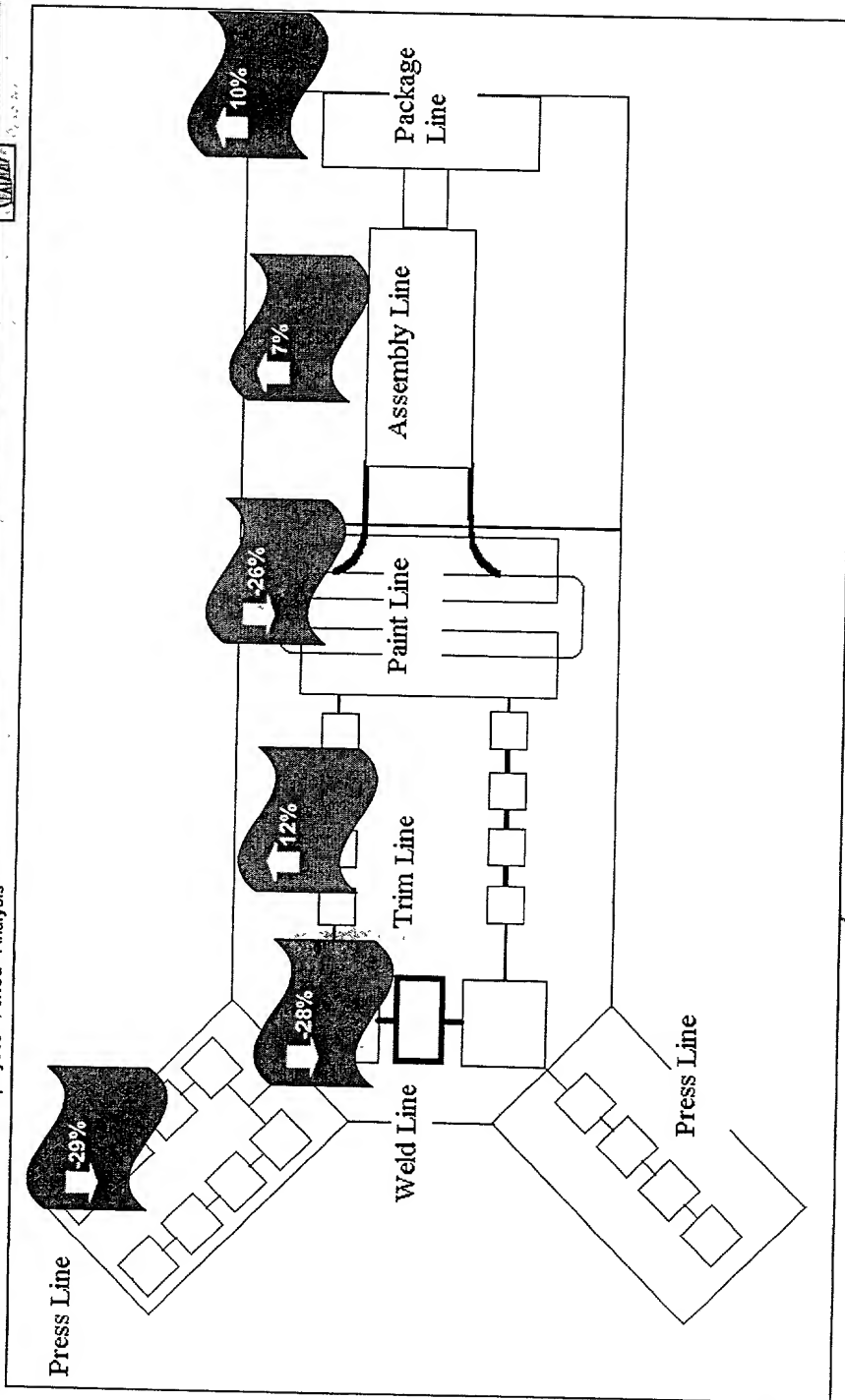


Fig. 15c

070

Employees Utilization and Performance Tracking

File	Company	Product	Employee	Period	Analysis	Date		Shift
Subdivision #				Post #	Total Time	Active time	Inactive time	Efficiency
			John	101	5:36	4:46	0:50	79%
			Mary	102	5:34	5:04	0:30	97%
			Kathy	103	5:05	3:25	1:40	95%
			Jack	104	5:51	5:35	0:16	101%
			Sally	105	2:55	2:40	0:15	105%
			Bob	106	6:07	5:17	0:50	76%
			Jim	110	5:29	4:48	0:41	82%
			Ali-Baba	111	5:44	5:32	0:12	104%
			Tom	112	5:36	4:46	0:50	79%
			Bo	113	5:34	5:04	0:30	97%
			Kit	114	5:05	3:26	1:39	95%
			Ron	115	5:51	5:36	0:15	101%
			Nick	116	2:55	2:40	0:15	105%
			Alex	120	6:07	5:17	0:50	76%
			Jay	121	5:29	4:48	0:41	82%
			Stive	122	5:44	5:32	0:12	104%
			Joe	123	5:29	4:48	0:41	82%
			Baba	124	5:44	5:32	0:12	104%
			Bill	125	5:36	4:46	0:50	79%
			Boss	126	5:34	5:04	0:30	97%
			Tim	127	5:05	3:26	1:39	95%

481

487

486

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484

483

482

Fig. 16a

482

Employees Utilization and Performance Tracking

File Compa Employ Period Analysis

Subdivision # Date Shift

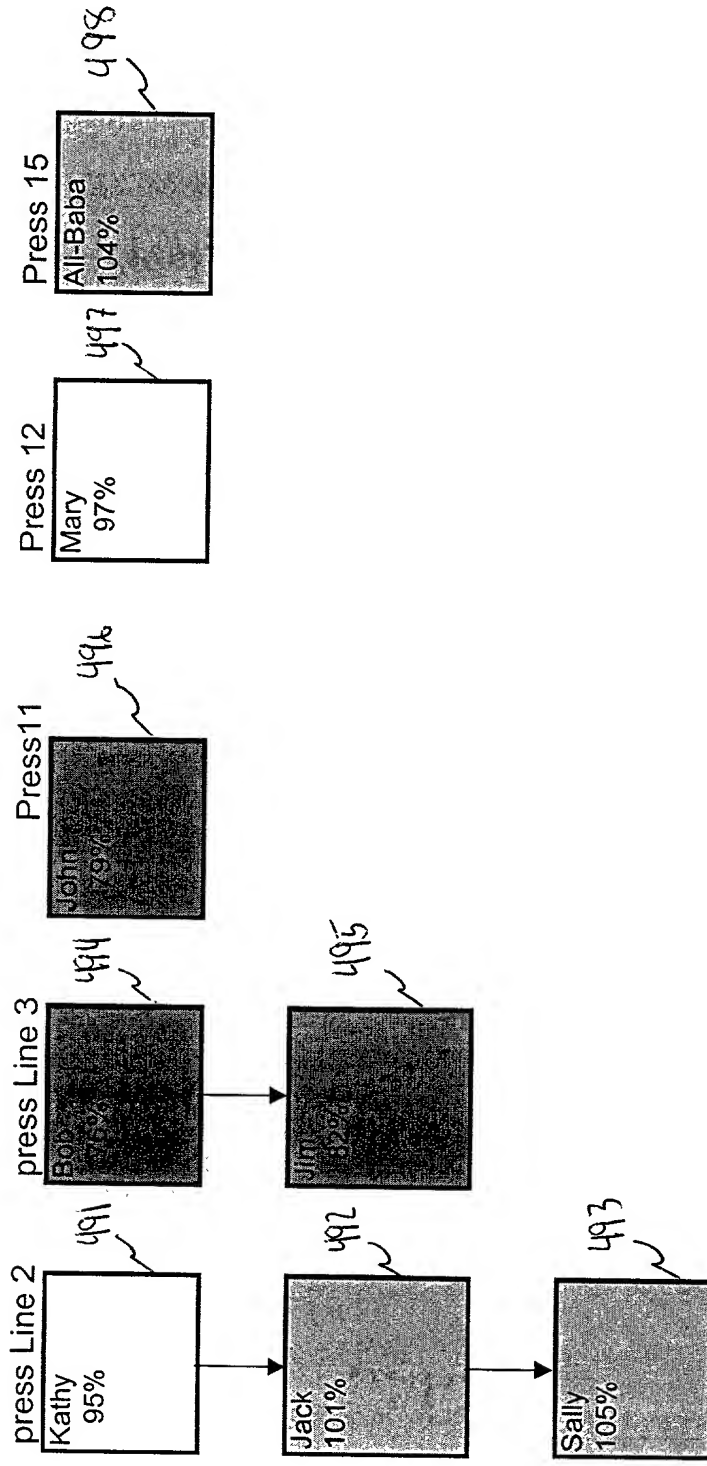


Fig. 16 b

Employees Utilization and Performance Tracking

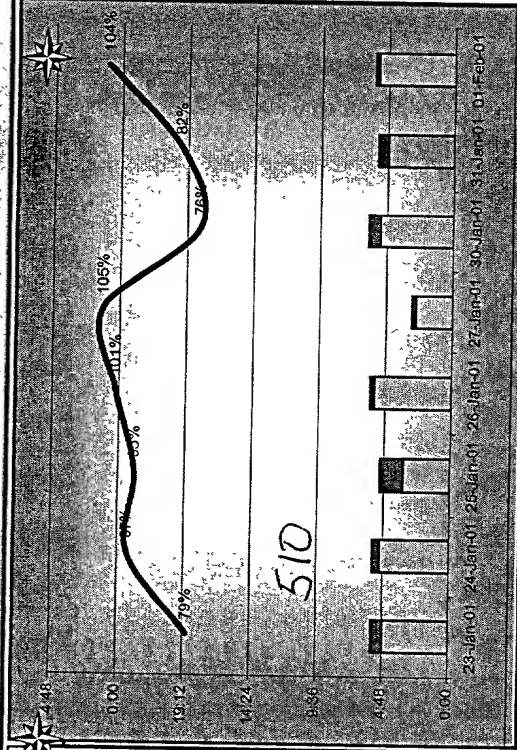
File Company Product Employee Period Analysis

5017 Employee Mary Period 01/23/01 - 02/04/01

DATE	Post	Total Time	Active time	Inactive time	Efficiency %
23-Jan-01	101	5:36	4:46	0:50	79%
24-Jan-01	102	5:34	5:03	0:30	97%
25-Jan-01	103	5:05	3:25	1:39	95%
26-Jan-01	103	5:51	5:35	0:15	101%
27-Jan-01	103	2:55	2:39	0:15	105%
30-Jan-01	105	6:07	5:16	0:50	76%
31-Jan-01	105	5:29	4:48	0:41	82%
01-Feb-01	107	5:44	5:31	0:12	104%
02-Feb-01	102				
03-Feb-01	102				
04-Feb-01	102				

5017 503 504 505 506 507

Employee Mary Lee



ID 56787 Pay Rate 25.65
 Name Mary Lee Date of hire 10/10/1998
 Division Forming Siniority 3
 Position Operator

Description Needs Close Supervision

Average Efficiency 92%



515

Fig. 16c

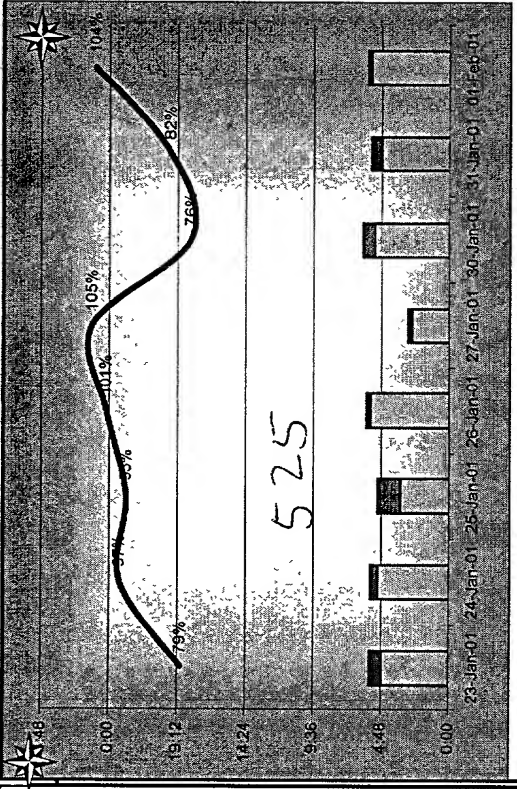
Employees Utilization and Performance Tracking

Company Product Employee Period Analysis

Post 101 Period 01/23/01 - 02/04/01

DATE	Employee	Total Time	Active time	Inactive time	Efficiency
23-Jan-01	John	5:36	4:46	0:50	79%
24-Jan-01	Mary	5:34	5:04	0:30	97%
25-Jan-01	Kathy	5:05	3:26	1:39	95%
26-Jan-01	Jack	5:51	5:36	0:15	101%
27-Jan-01	Sally	2:55	2:40	0:15	105%
30-Jan-01	Bob	6:07	5:17	0:50	76%
31-Jan-01	Jim	5:29	4:48	0:41	82%
01-Feb-01	Ali-Baba	5:44	5:32	0:12	104%
02-Feb-01					
03-Feb-01					
04-Feb-01					

521 ~ 522



F 101

ID 23456

Name Press



Description 200 ton mechanical press

Average Efficiency 92%

527

Fig. 16d

		Date		Shift				
		531						
Post ID	Available Time	Down Time		Repair Time		Reaction Time		
		min	%	min	%	min	%	
1	480	140	29%	112	23%	28	6%	
2	480	53	11%	38	8%	15	3%	
3	480	20	4%	18	4%	2	0%	
4	480	48	10%	41	9%	7	1%	
5	480	6	1%	5	1%	1	0%	
6	480	128	27%	101	21%	27	6%	
7	480	128	27%	101	21%	27	6%	
8	480	12	3%	10	2%	2	0%	
9	480	59	12%	44	9%	15	3%	
10	480	140	29%	112	23%	28	6%	
11	480	53	11%	38	8%	15	3%	
12	480	20	4%	18	4%	2	0%	
13	480	48	10%	41	9%	7	1%	
14	480	6	1%	5	1%	1	0%	
15	480	128	27%	101	21%	27	6%	
16	480	128	27%	101	21%	27	6%	
17	480	12	3%	10	2%	2	0%	
18	480	59	12%	44	9%	15	3%	
19	480	48	10%	41	9%	7	1%	
532		533	534	535	536	537	538	539

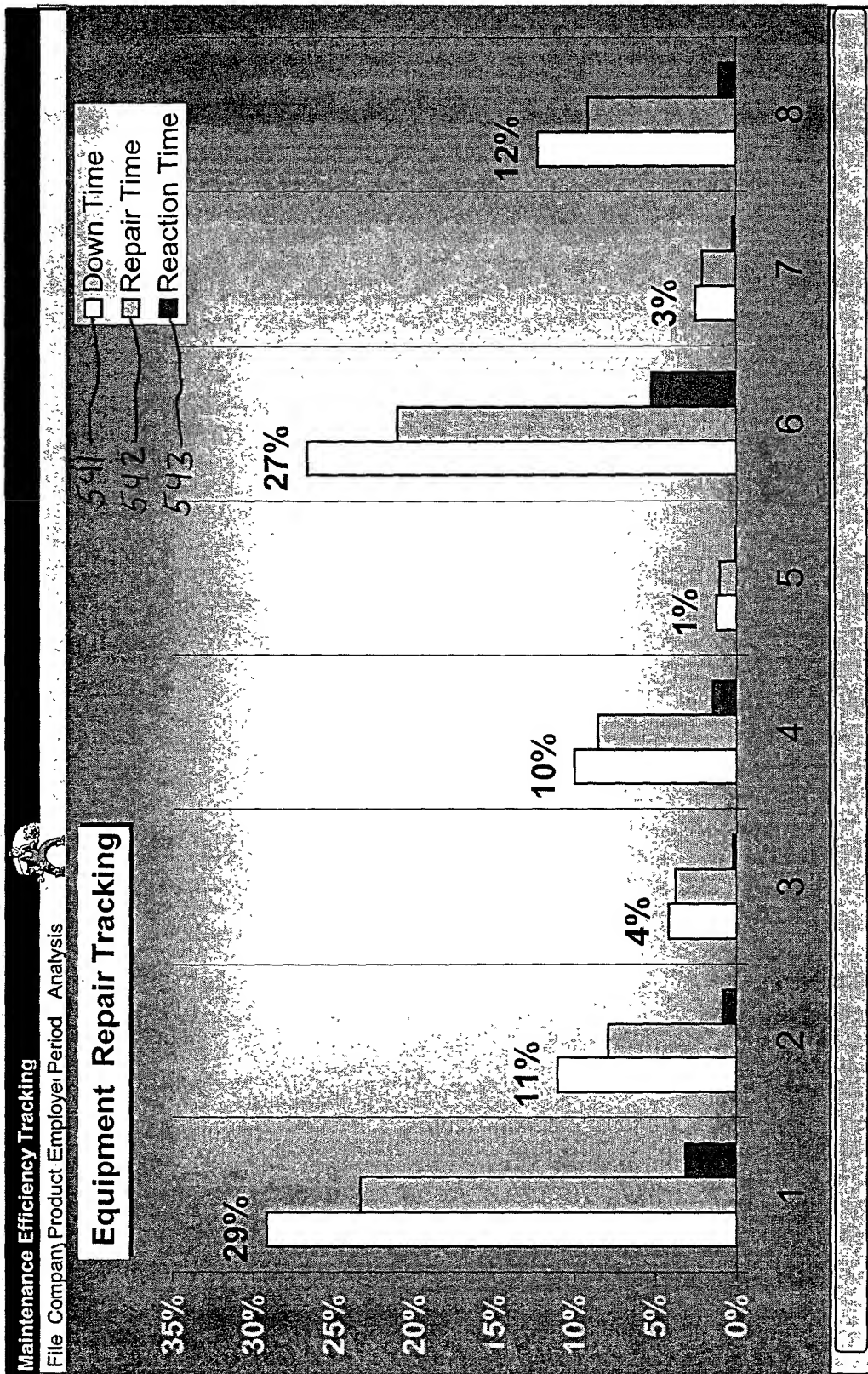


Fig. 17b

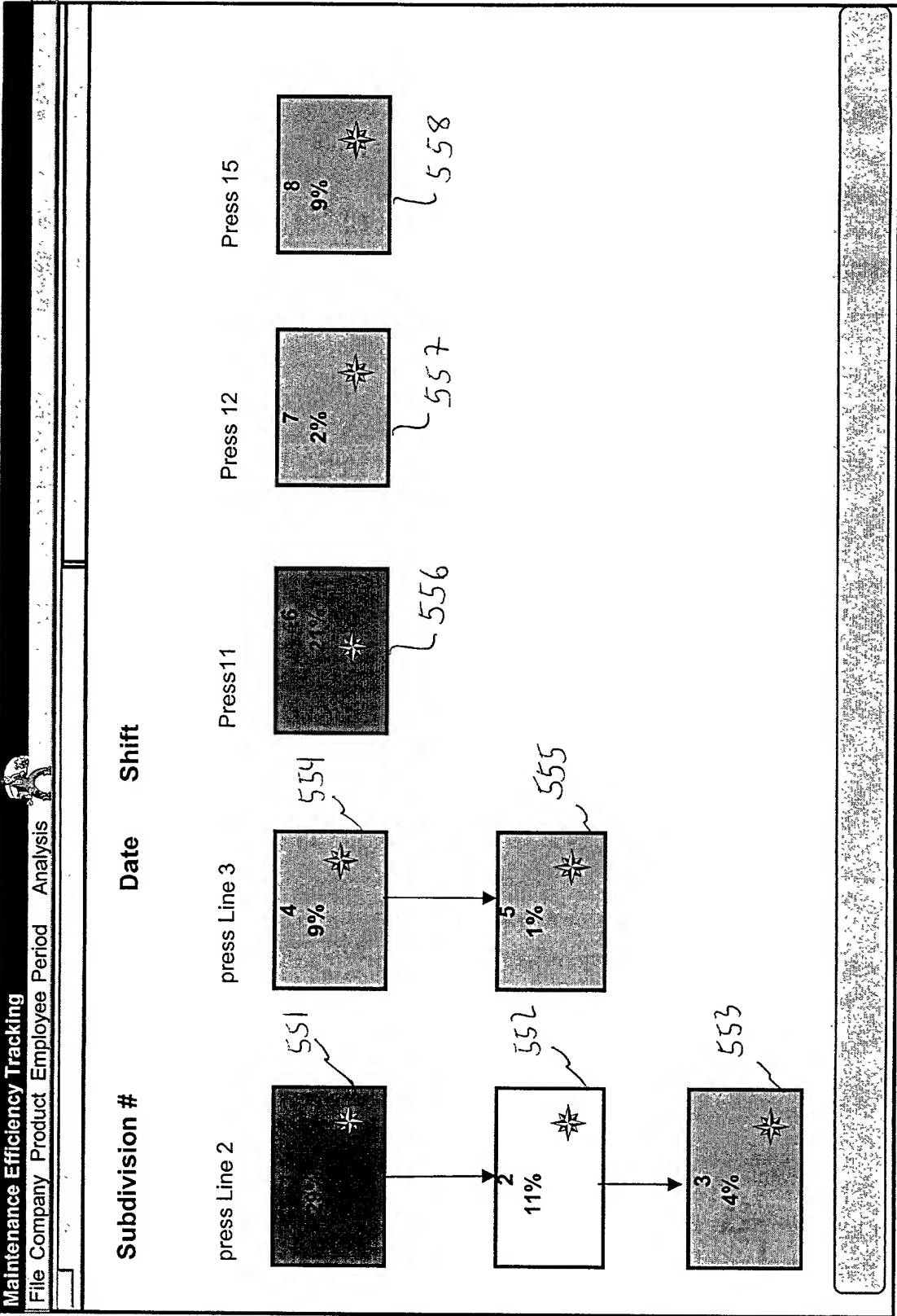


Fig 17c

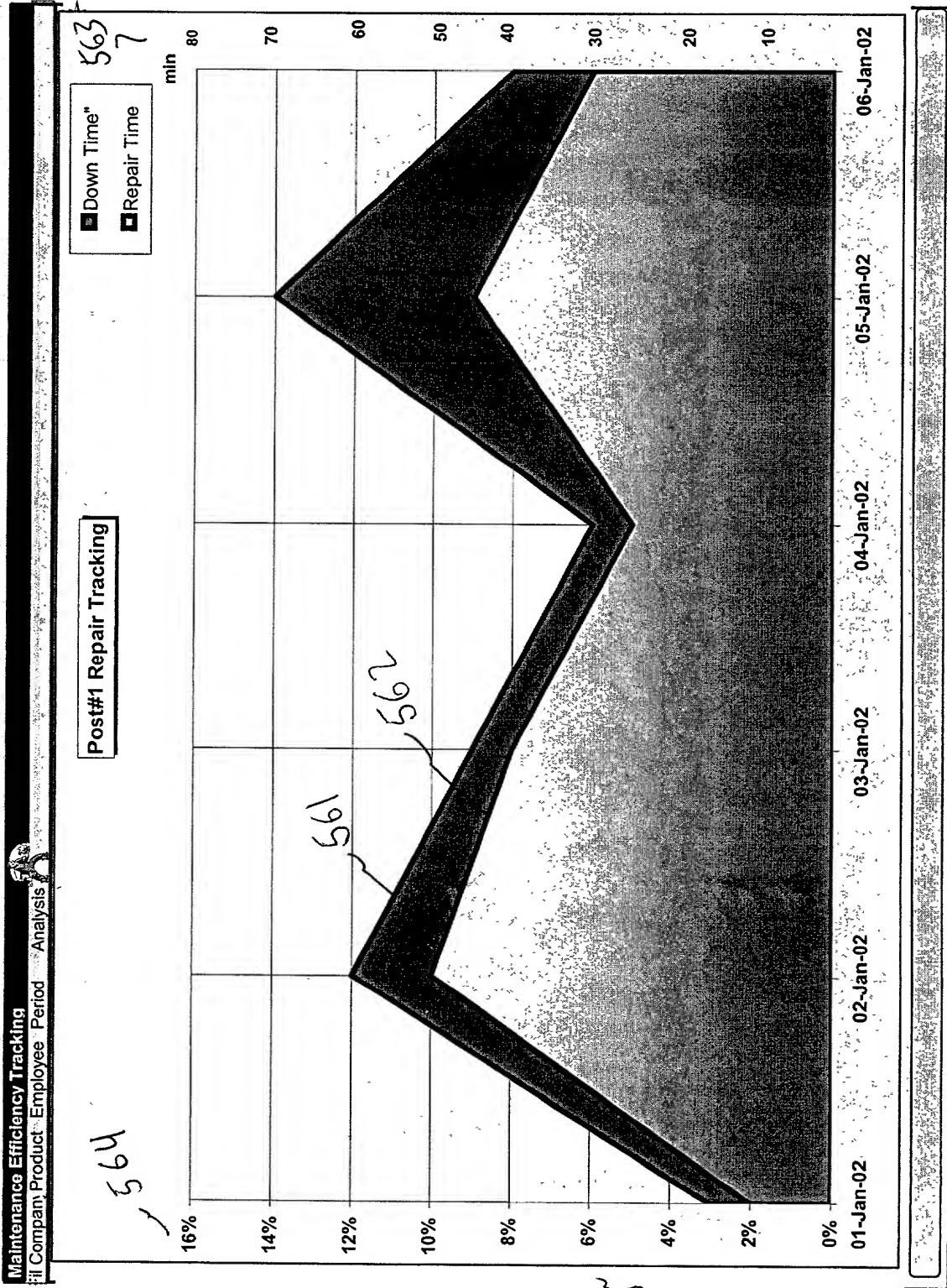


Fig. 17d

Maintenance Efficiency Tracking

File Company Product Employee Period Analysis

Date

Shift

Post #1 Repair Report

Repair Time
28%

Reaction Time
4%

Productive Time
68%

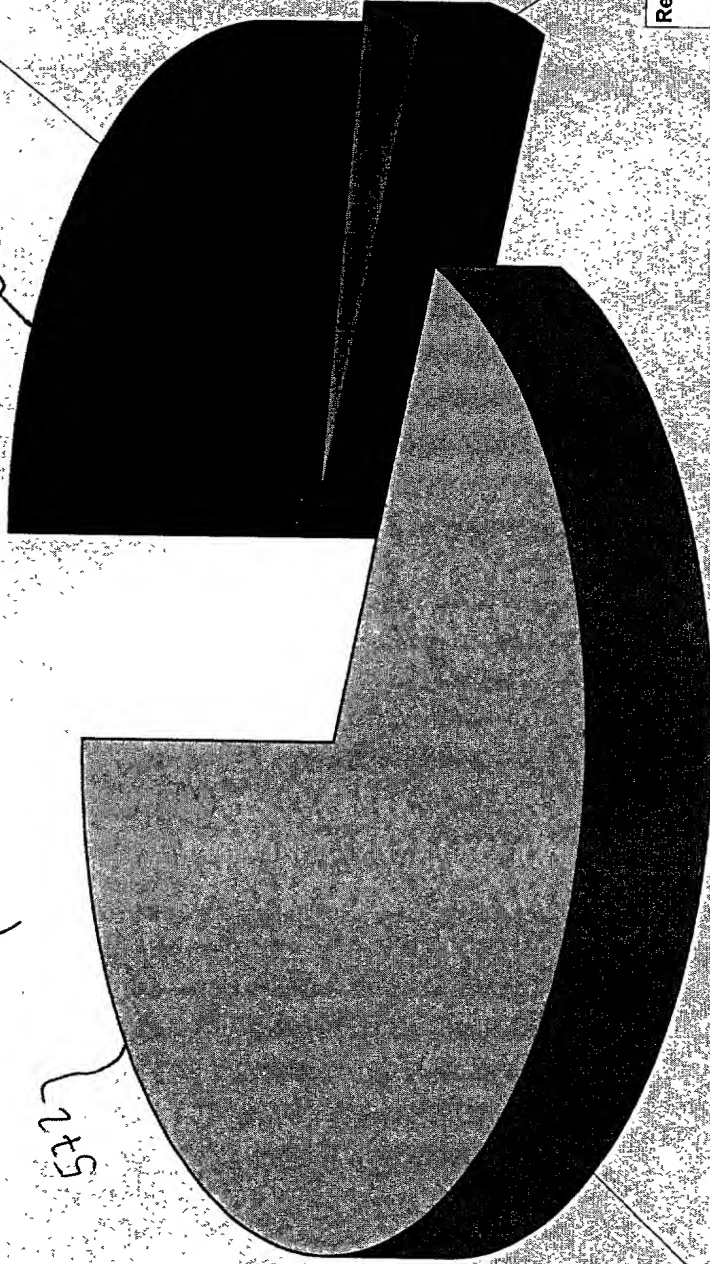


Fig. 17c

Share of Blame

File Company Product Employee Period Analysis

Subdivision # Date Shift

Post ID	Schedule av. Time	PT Production Run Time	DOT No Operator	DMT No Material	Downtime		DTT Tool Failure	DQT QC Problem	Set up time		PMT PM Time	DT Dead Time	Technician		
					DET Machine Failure	DET Tool Failure			DUT Undefin ed	STT Tool/ Machin e			SMT Material	TID Technicia n ID	TRT
1	200	180	35%	10%	14%	19%	0%	0%	0%	5%	6%	0%	11%		
2	200	165	0%	0%	72%	0%	14%	0%	0%	5%	8%	0%	1%		
3	200	100	1%	21%	0%	0%	0%	0%	0%	12%	9%	0%	57%		
4	200	196	12%	0%	75%	0%	0%	0%	0%	0%	12%	0%	1%		
5	200	125	15%	10%	0%	36%	17%	0%	0%	0%	4%	0%	18%		
6	200	177	3%	25%	14%	0%	0%	0%	45%	0%	5%	5%	3%		
7	200	180	35%	10%	14%	19%	0%	0%	0%	5%	6%	0%	11%		
8	200	165	0%	0%	72%	0%	14%	0%	0%	5%	8%	0%	1%		
9	200	100	1%	21%	0%	0%	0%	0%	0%	12%	9%	0%	57%		
10	200	196	12%	0%	75%	0%	0%	0%	0%	0%	12%	0%	1%		
11	200	125	15%	10%	0%	36%	17%	0%	0%	0%	4%	0%	18%		
12	200	177	3%	25%	14%	0%	0%	0%	45%	0%	5%	5%	3%		
13	200	180	35%	10%	14%	19%	0%	0%	0%	5%	6%	0%	11%		
14	200	165	0%	0%	72%	0%	14%	0%	0%	5%	8%	0%	1%		
15	200	100	1%	21%	0%	0%	0%	0%	0%	12%	9%	0%	57%		
16	200	196	12%	0%	75%	0%	0%	0%	0%	0%	12%	0%	1%		
17	200	125	15%	10%	0%	36%	17%	0%	0%	0%	4%	0%	18%		
18	200	177	3%	25%	14%	0%	0%	0%	45%	0%	5%	5%	3%		
19	200	180	35%	10%	14%	19%	0%	0%	0%	5%	6%	0%	11%		
20	200	165	0%	0%	72%	0%	14%	0%	0%	5%	8%	0%	1%		
21	200	100	1%	21%	0%	0%	0%	0%	0%	12%	9%	0%	57%		
22	200	196	12%	0%	75%	0%	0%	0%	0%	0%	12%	0%	1%		
23	200	125	15%	10%	0%	36%	17%	0%	0%	0%	4%	0%	18%		
24	200	177	3%	25%	14%	0%	0%	0%	45%	0%	5%	5%	3%		
25	200	180	35%	10%	14%	19%	0%	0%	0%	5%	6%	0%	11%		
26	200	165	0%	0%	72%	0%	14%	0%	0%	5%	8%	0%	1%		
27	200	100	1%	21%	0%	0%	0%	0%	0%	12%	9%	0%	57%		
28	200	196	12%	0%	75%	0%	0%	0%	0%	0%	12%	0%	1%		
29	200	125	15%	10%	0%	36%	17%	0%	0%	0%	4%	0%	18%		
30	200	177	3%	25%	14%	0%	0%	0%	45%	0%	5%	5%	3%		

L501 L502 L503 L504 L505 L506 L507 L508 L509 L510 L511 L512 L513 L514 L515 L516 L517 L518 L519 L520 L521 L522 L523 L524 L525 L526 L527 L528 L529 L530 L531 L532 L533 L534 L535 L536 L537 L538 L539 L540 L541 L542 L543 L544 L545 L546 L547 L548 L549 L550 L551 L552 L553 L554 L555 L556 L557 L558 L559 L560 L561 L562 L563 L564 L565 L566 L567 L568 L569 L570 L571 L572 L573 L574 L575 L576 L577 L578 L579 L580 L581 L582 L583 L584 L585 L586 L587 L588 L589 L590 L591 L592 L593

Fig. 18a

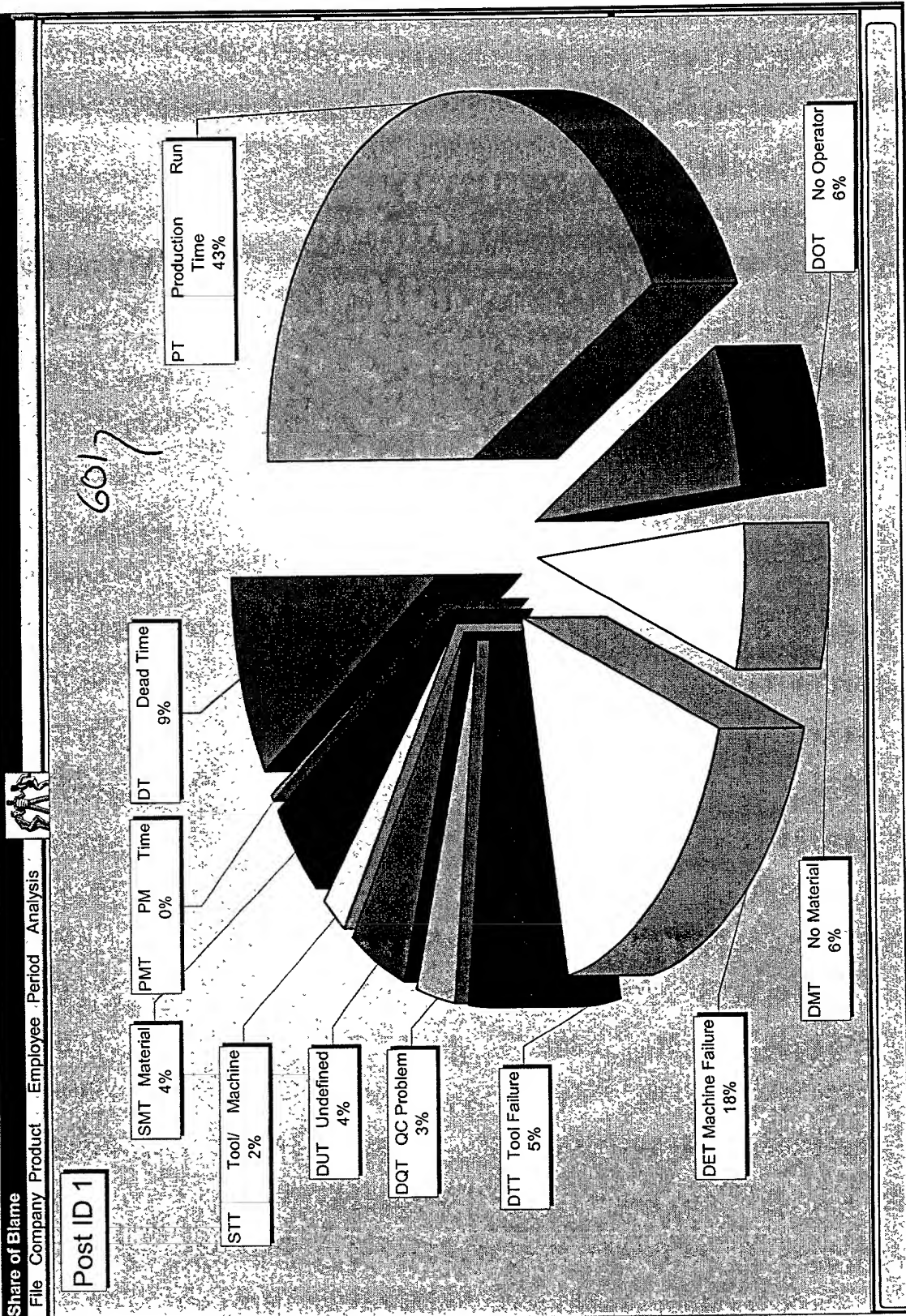


Fig. 18b

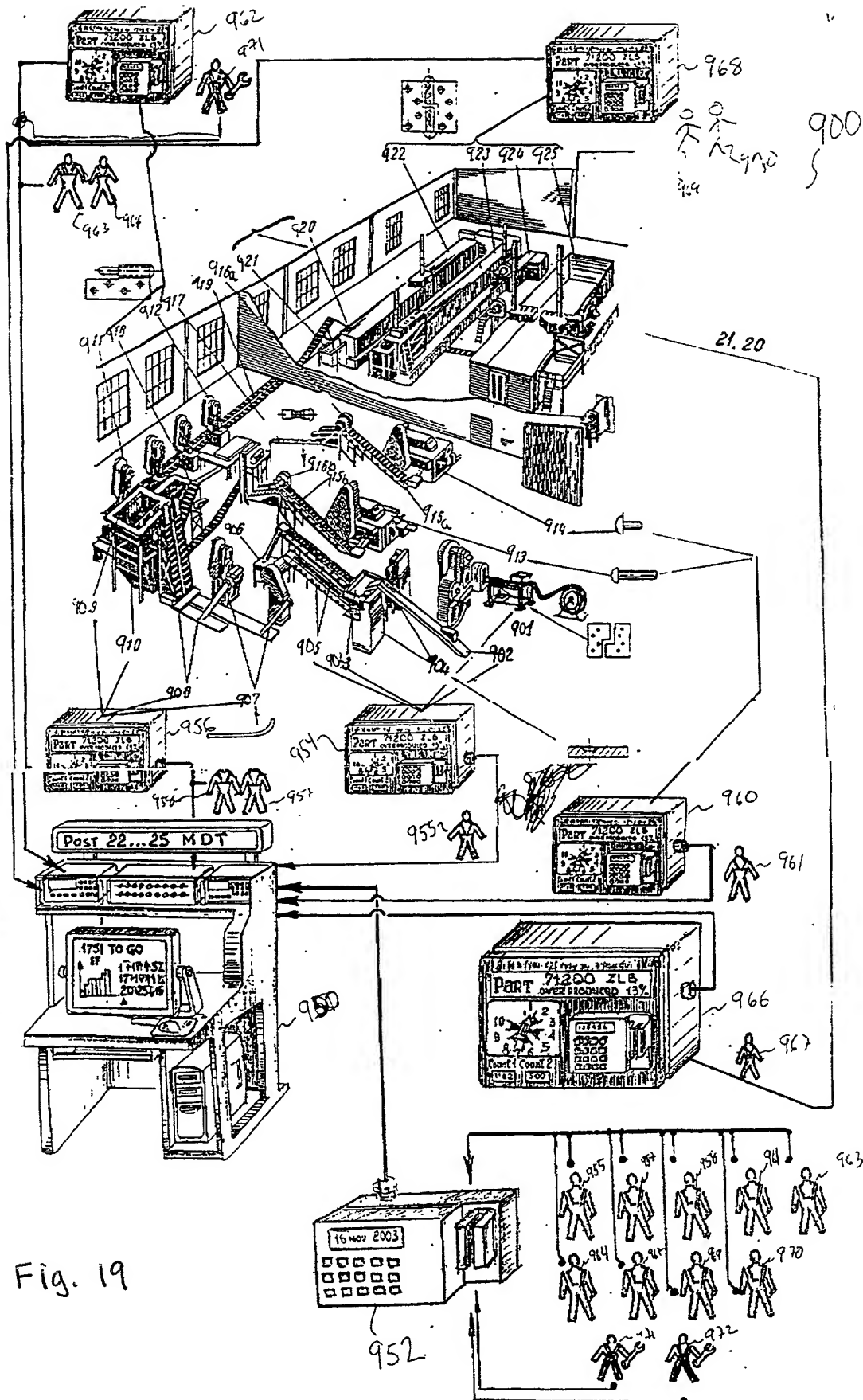


FIG. 19 is a schematic diagram of a security system. The system includes a central control room (900) with a monitor (901) and a keyboard (902). The monitor displays a bar graph and the text "1751 TO GO". The control room is connected to a network of lines (903) that lead to various rooms and areas. The rooms include a large room (904) with a desk and a chair, and several smaller rooms (905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000). The system also includes a large number 21.20 on the right side.

1000 **Method of Calculating Production Cost and Efficiency**

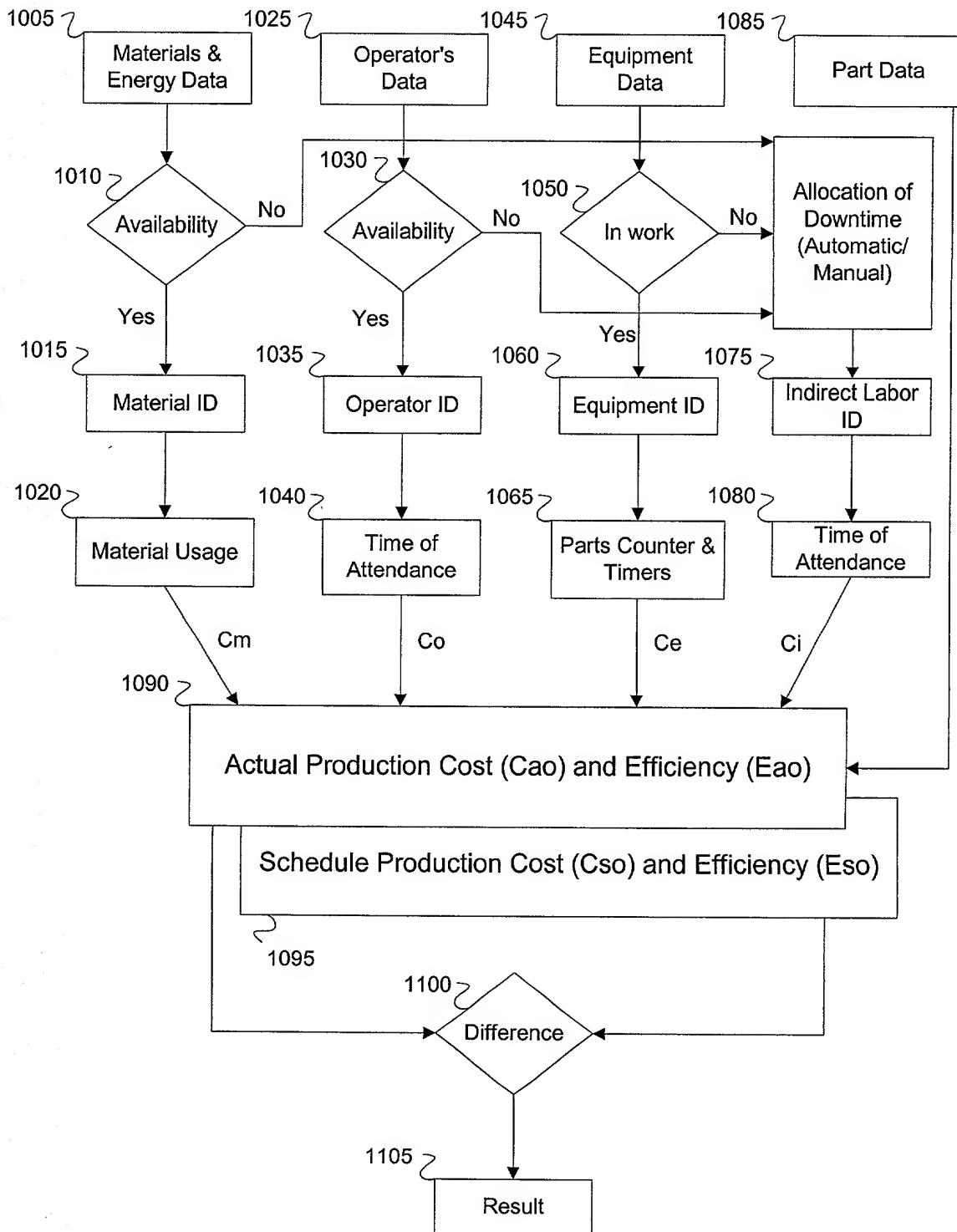


Fig. 20